

The public relations of science, the flying pig and the jet-propelled cane toad

Science is now being sold in our shopping centres and supermarkets. Rosaleen Love takes a look at this new form of science communication and asks whether it adequately addresses environmental concerns.

A COUPLE OF YEARS ago, while I was in a supermarket in front of the dairy cabinet, looking at a display of butter – butter salted, butter unsalted, butter softened, butter in plastic tubs, either salted or unsalted, softened or unsoftened – a news item was read over Tuckerbag News, broadcast through the shop on the PA system. An Australian woman had died under an anaesthetic while undergoing an IVF procedure. What made the item newsworthy was, presumably, that she was the first to die in this way, in the quest for the ultimate marketable product, the take-home human baby.

The setting: the market; the information medium: the news as a supermarket service to the public (or so it was advertised); the incongruity between the choice I faced and the tragic outcome of the choice the unnamed woman had made, all led to one of those feelings of weirdness, of just who is among the aliens here. Is there human life on earth, or are we all cloned members of species of producers, consumers, and the consumed?

How easily it has happened, over the past twenty years, that the biological sciences and technologies have begun to shape everyday life in ways that somehow seem perfectly 'natural'. In this new world, scientific information is no longer knowledge existing in some kind of abstract purity. It sometimes appears to be another commodity to be traded and manipulated by those who seek to control the outcome.

In March, in the shopping mall at Airport West in Melbourne, cute and cuddly flying pink plastic pigs crowned CSIRO's exhibition on genetic engineering. The same porco-avian icon appeared on National TV, above the head of Barry Jones as he launched the exhibition on its travels around the Westfield shopping centres of Australia. CSIRO is engaged in an exercise in explanation and accountability, bringing knowledge about what it is doing to the public, with the market audience upper secondary school pupils in search of project material. The science exhibit is in the market place, something to be experienced as part of the shopping life. It has been sponsored

by the biotechnology industry.

The exhibition is public relations for science, timed to coincide with the report of the House of Representatives Committee of Inquiry on the release of genetically modified organisms to the Australian environment. (The outcome of the inquiry was reported in *Chain Reaction* 66; it decided in favour of the promise of biotechnology, and recommended that the present guidelines on deliberate release be made mandatory.) The voices of scientists advocating release are assured, speaking the language of science with authority and certainty. It is science in search of the marketable product, science which increasingly incorporates the language of patent law, commercial acceptability and the promise of increased economic performance.

The flying pink pig was a poke at the critics of the new technology, biocritics such as ecologists, environmentalists, consumer advocates and concerned members of the public who made submissions to the inquiry on the broad ecological and social implications of the new technology. 'Of course pigs won't fly', the CSIRO was reassuring on that point, though it is more of a straw man, that pig. Biocritics are more concerned with the real-life transgenic pigs to the Adelaide market story, when in 1988 some fifty experimental pigs were slaughtered for human consumption without official approval.

The CSIRO exhibition gave space for some prominent biocritics to voice their concerns, including Robyn Rowland, Peter Garrett, and Peter Singer. They were shown on interactive skip video (a great new fun technology) responding to the question 'Is the risk to the environment too great?' Yes, there are risks, was the consensus, but the scientists – Marilyn Sleight and Sir Gustav Nossal – argue that they are proceeding very cautiously, while the biocritics can't yet point to evidence of a genetically engineered environmental disaster. At the end of the video sequence, viewers were asked to record their vote, and the addition of their vote to the total was displayed in jazzy graphics. Leaving aside the question of

who voted, and how often, back in March some 61 per cent of voters had agreed the risk to the environment was too great.

When asked 'Who should control genetic engineering?' 46 per cent replied 'the community' (well ahead of 28 per cent for the next group, the scientists). On the question of 'Should we use it on humans?' (in the context of making new drugs and treating genetic diseases) 51 per cent agreed. 'Should companies be allowed to exploit it?' 64 per cent, said no. What is of interest here is the greater public sympathy for use in relieving human suffering, and a different conception of what 'risk to the environment' might mean. No doubt those registering their concern recall the outcome of past *laissez-faire* attitudes to environmental impact. Instead of a pig with wings, the jet-propelled cane-toad might better serve as a wart-encrusted hi-tech symbol of ecological havoc.

Other exhibits explained genetic engineering techniques and theory. Potential economic and environmental benefits were stressed: environmentally friendly cotton, genetically engineered to resist the cotton bollworm and so reduce the need for chemical sprays; disease-free potatoes which carry an extra gene to fool the potato leaf roll virus; the control of blowflies, ticks, and lice in animals by transferring a plant gene to animals so that they secrete a natural insecticide in their sweat; genetically engineered human growth hormone and insulin, already in use.

The reservation the critics have is that, while all the above sounds very impressive, Australia is leading the world in releases of new organisms to the environment, and this rush to be first where others are more cautious may not prove wise. A laudable aim to reduce pesticide use may have unanticipated effects, just as the introduction of chemical pesticides led, among other things, to the increased fragility of penguin eggs in Antarctica.

The word 'risk' conjures up for the environmentalist the notion of risk to the environment. In an industry context, it can also mean 'commercial risk'. One report to the Commonwealth inquiry

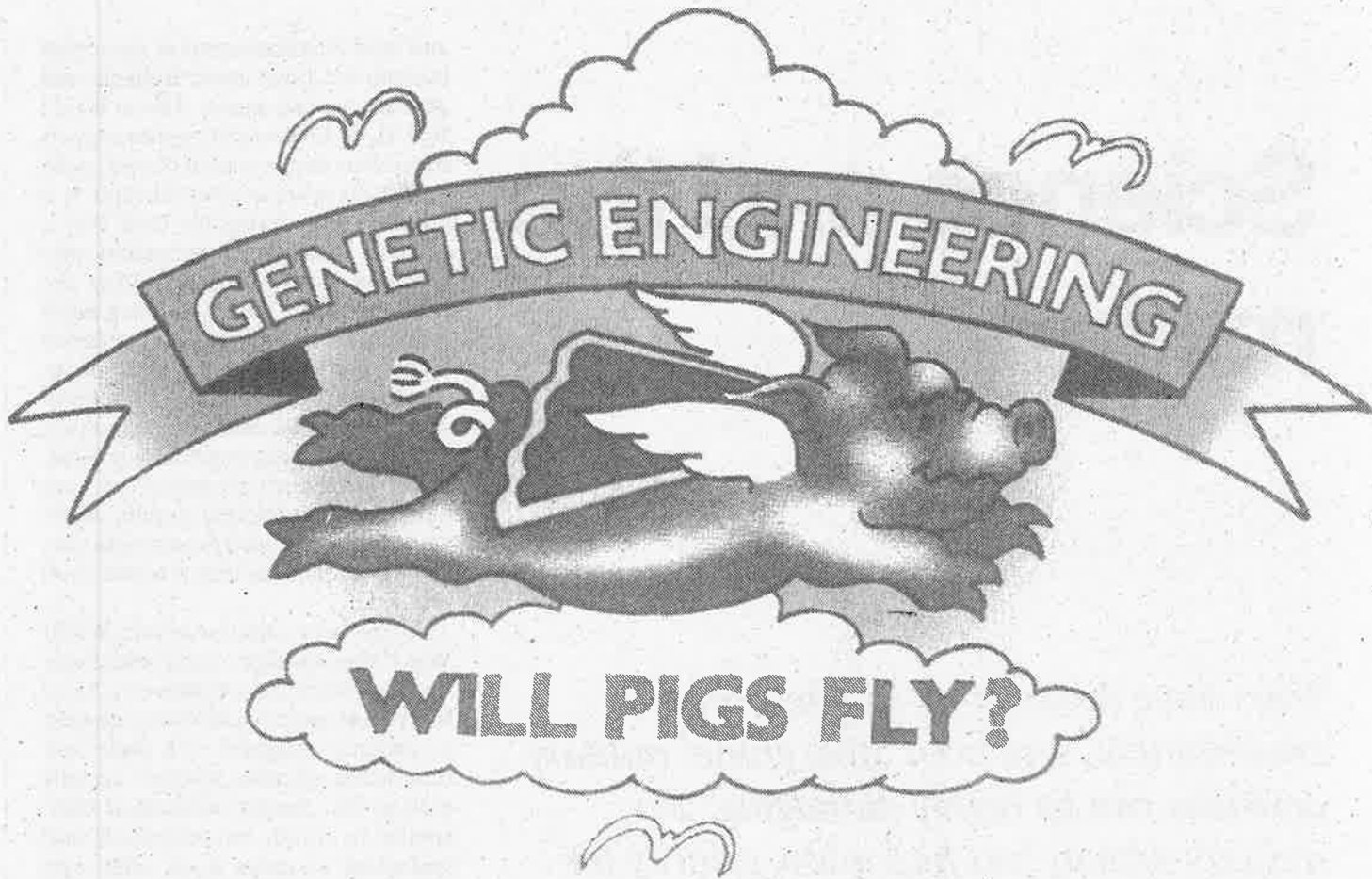
described the risks involved in enhancing the activity of a naturally occurring virus specific for the *Heliothis* pest in cotton, where the project was described as a 'high risk' project in that it might not succeed. 'Risk' is the possible loss of R&D investment. Then again, as the CSIRO exhibit tells it, 50 per cent of the world's insecticides are used on cotton. Growing organic cotton is clearly a problem in search of a solution.

Biocritics raise questions about the commercialisation of basic research and the appropriation of genetic resources. In the new way of looking at things, patenting, a form of private appropriation, may be described (as it was in one submission to the inquiry) as 'a form of publication', as a way of informing the public about what is going on. The patent, i.e. the means of stopping others from doing something, is the publication, in the 'commercial-in-confidence' arena.

It is in this context that CSIRO is sending round its travelling exhibition. It is a form of public relations for the new science, a selling of science to the Australian public, the communication of science from the experts to the public, with some new fun technology to allow us to give them some feedback. However well-intentioned, though, the one-way science-centred process of science communication sometimes has that faint air of snake-oil salesmanship about it. It will provide the information that CSIRO wants the public to hear, but it may not provide an adequate response to the questions the public may be asking.

'What about the cane toad?' is a perfectly valid question from anyone in Australia expressing concern about the introduction of new exotic organisms, man-made or otherwise. It is not a question those who advocate the new releases to the environment want to hear. They regard it as unfair, the cane toad being 50,000 genes on the hop, while the genetic engineer plans only to modify one or two genes, and indeed, may one day manage to solve the cane-toad problem that way.

The biotechnologists feel they are being unfairly singled out for attention, not so much for what they are doing, as



for what other people have done in the past. (It was the CSIRO that introduced the cane toad for pest control in 1935.) In an interview in the *Australian*, Marilyn Sleigh said 'I think genetic engineering is like the cherry on top of the cake and what they (the environmentalists) are really worried about is the cake, the existing environmental problems'. True. Though the cake may be poisoned, the cherry may prove plastic. Another argument advanced to try to keep public concern within bounds is that recent discoveries show that genes frequently jump species boundaries in nature, and we're only just beginning to find the full extent of this. Dr Jim Peacock of CSIRO, in a public address a few years ago at ANZAAS, made the amazing statement that there's some evidence that some genes in human haemoglobin have been found in the growing tips of carrots. A modern St Francis of Assisi must add 'My sister, the carrot' to 'my brother, the ass'.

The problem is one of two-way communication. On one side, science is

seen as something to be packaged and sold by the expert for the passive consumer. The promoters of public science events often implicitly adopt what the British researcher Brian Wynne calls a 'cognitive deficit' model of science communication. If the Australian public do not know that the new biotechnologies will be the salvation of the economy, then there must be something wrong with the public's collective brain, some hole which must be filled with information. It is a 'blame the recipient' model which has the same problem as other 'blame the victim' explanations.

Brian Wynne argues that scientific communication, if it is uncritically science-centred in this way, may send contradictory and unintended messages about science to the consumer of scientific information. The public response to the exhibition might well be a sceptical. 'They would say that, wouldn't they?' or 'Look who's talking'. Hostility to science may be a product of the best communication intentions.

The American technology writer Langdon Winner once described himself, when he wrote on the topic of risk, as entering thickets of scientific uncertainty, winding his way through labyrinths of risk/cost/benefit analysis, balancing skilfully along the fact/value gap, and stopping to gaze upon the colourful befuddlement of mass psychology. The science communication game is a thicket-labyrinth-gap-befuddlement situation, through which various well-intentioned people are currently feeling their way. No-one yet has the answers. Future knowledge is unforeseeable. The implications of technology are unknown. Single factors may lead to a multitude of consequences, and pigs may develop wings. After all, once pterodactyls flew in the sky, and what could be more ridiculous than a flying pig? A flying dinosaur, that's what.

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